

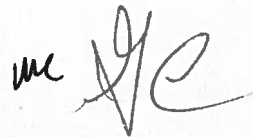
**DEPARTMENT OF BUILDING AND DEVELOPMENT**

**COUNTY OF LOUDOUN**

**MEMORANDUM**

DATE: October 23, 2009

TO: Judi Birkitt, Department of Planning

FROM: William Marsh, Environmental Review Team Leader 

CC: Amy Lohr, Zoning Planner  
Joe Gorney, Department of Planning  
Steve Hargan, Economic Development  
Alex Blackburn, Building and Development

**SUBJECT: ZMAP-2009-0005, SPEX-2009-0009, CMPT-2009-0001 Green Energy Partners (formerly Stonewall Secure Business Park, Hybrid Energy Center)**

The Environmental Review Team (ERT) met to discuss this case on October 5, 2009, with a follow up field visit to an electrical generation plan in Fluvanna County similar to the proposed use on October 15, 2009. ERT offers the following comments:

1. Given the need for a level operating surface and that much of the site is located on land with slopes close to 10 percent, staff is concerned about the proximity of combined cycle support structures to areas of very steep slopes. Because Section 5-1508 of the Revised 1993 Zoning Ordinance prohibits disturbance of very steep slopes, staff requests further verification that very steep slopes remain undisturbed.
2. Please verify the treatment approach for condensate runoff from the cooling tower, including how bio-cides and possible chlorine remnants from Town of Leesburg water will be treated. Although the application indicates that most cooling tower water is vaporized, some condensate may remain and could become runoff.
3. Energy and Communication Policy 4 allows location of electric generation facilities "only where their impact on the surrounding land uses and the environment is compatible." (RGP page 2-23) Recent benthic surveys (using Save our Streams protocol) of Sycolin Creek just downstream of the Gant Road indicate that the stream is consistently at the acceptable level and frequently at the highest level for benthic scores. The applicant's packet also confirms the presence of wood turtle, a threatened species that relies on high water quality and large forest resources adjacent to the stream. Staff provides the following

recommendations for water quality treatment and monitoring to help verify that runoff from the proposed use is compatible with the current benthic environment of Sycolin Creek, even if said recommendations exceed minimum state requirements for the proposed use:

- Storm runoff from all impervious surfaces on site will be treated by best management practices that achieve the highest pollutant removal efficiency rating recognized by the Department of Conservation and Recreation.
  - Water flow temperature leaving the site is compatible with Sycolin Creek flow temperature throughout the year. Staff notes that a combined cycle plant in Fluvanna County achieves this standard by conveying plant runoff through two chillers before entering the stormwater pond.
  - A permanent stream monitoring gage for Sycolin Creek will be installed as part of this application. The Sycolin Creek monitoring station will record the average flow, temperature, pH, conductivity and turbidity every 15 minutes. The monitoring station will be installed prior to site development and will be maintained for 10 years following project completion, after which the County will have the option to continue with the maintenance and monitoring of the station. The monitoring station will be located in Sycolin Creek immediately downstream of the plant outfall location.
  - The flow, temperature, pH, conductivity and turbidity from the drainage leaving the plant will also be monitoring on a weekly basis.
  - At both locations, water quality samples will be collected and analyzed for TDS, TSS, Total Nitrogen and Total Phosphorus on a monthly basis. One half of these samples will be collected following a period where the site received at least 0.5" of rain in a 48 hours period.
  - Collaboration with Luck Stone may enable co-location of stream flow gage that would help meet requirements for the quarry expansion. Any Gant Lane improvements needed for construction traffic may provide an opportunity for a geometrically controlled stream crossing making flow measurement more convenient (provided ZO Section 4-1500 is also met.)
4. Staff recommends proactive steps that isolate and shield noise sources on site such that noise levels approach RGP recommendations for ambient noise of surrounding uses, as well as meeting ZO noise requirements. Staff suggests the RGP noise policies for highway noise because power plant noise can be a persistent noise source similar to highway noise, described on page 5-45 of the RGP. Constant measurement of noise levels at strategic locations on the site is also recommended to verify noise levels, including during construction. Specific suggestions follow:
- Provide noise shields for any emergency gas release valves. A retrofit for the release valve was performed at the Fluvanna County facility after initial use. Also consider noise abatement at junctures where pressurized steam could be released into the air.

- Verify whether peaker and combined cycle facilities are enclosed or in open air. This is not specified with this application.
- Consider attenuating noise sources to help achieve a 57 dB(A)Leq(h) or lower level adjacent to Philip Bolen Park, as verified by a noise model. Bolen Park includes trail use and natural areas along Sycolin Creek that meet the description of “lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.”

Noise complaints have been a chronic concern for Fluvanna County facility operators, even though the special use permit was approved with noise requirements at the property lines while also having more open space than this project. The preceding recommendations are meant to apply “lessons learned” from the Fluvanna project to minimize future noise concerns.

5. Because DEQ air quality permitting requirements are less rigorous and can be completed more quickly for solar photovoltaic generation than for combined cycle generation, staff recommends deployment and activation of the 1-Megawatt solar array prior to completing construction of the combined cycle plant. Adding generating capacity as soon as allowable by the DEQ and relevant utilities will better meet RGP Energy and Communications Facilities language encouraging “timely delivery” of electricity to county residents and businesses (page 2-23.)
6. Staff emphasizes the importance of mitigating wetland and stream impacts close to the impact area to help maintain water quality and flood protection functions, as well as habitat. As such, for any necessary mitigation, staff recommends that the applicant commit to prioritizing mitigation as follows: 1) onsite, 2) within the Sycolin Run Watershed within the same Planning Policy Area, 3) within the Sycolin Creek Watershed outside the Planning Policy Area, and 4) Loudoun County, subject to approval by the Corps and the Virginia Department of Environmental Quality (DEQ). This approach is consistent with Policy 23 on Page 5-11 of the RGP which states that “the County will support the federal goal of no net loss to wetlands in the County.” Furthermore, the County's strategy is to protect its existing green infrastructure elements and to recapture elements where possible [RGP, Page 6-8, Green Infrastructure Text].
7. Staff acknowledges depictions of tree conservation areas on site but cautions that some of this area may be lost to a relocated Cochran Mill Road per the Countywide Transportation Plan. For clarity, staff recommends that the general alignment be depicted on concept development plan. Staff further recommends enlarging the tree conservation area to open space west of the power plant and draining to Sycolin Creek.
8. Staff recommends continued outreach to Loudoun Water, LuckStone, and to the Town of Leesburg to achieve co-location of utility lines for this project and

10/23/2009

Loudoun Water's project. Staff is also available to facilitate stakeholder meetings related to this recommendation.

Staff is available to answer any questions.